CCAP Analysis in Support of the California Climate Change Advisory Committee

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California Climate Change Advisory Committee
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About the Center for Clean Air Policy

- Non-profit environmental think tank founded in 1985 by state governors to find a market-based solution to acid rain
- Applying similar approaches to ozone, greenhouse gases, and air toxics at the state, regional, national and international levels
- Leader in the OTAG process, EU GHG trading system design, and international climate change negotiations
- Sponsor power sector and economy-wide modeling to support policy design

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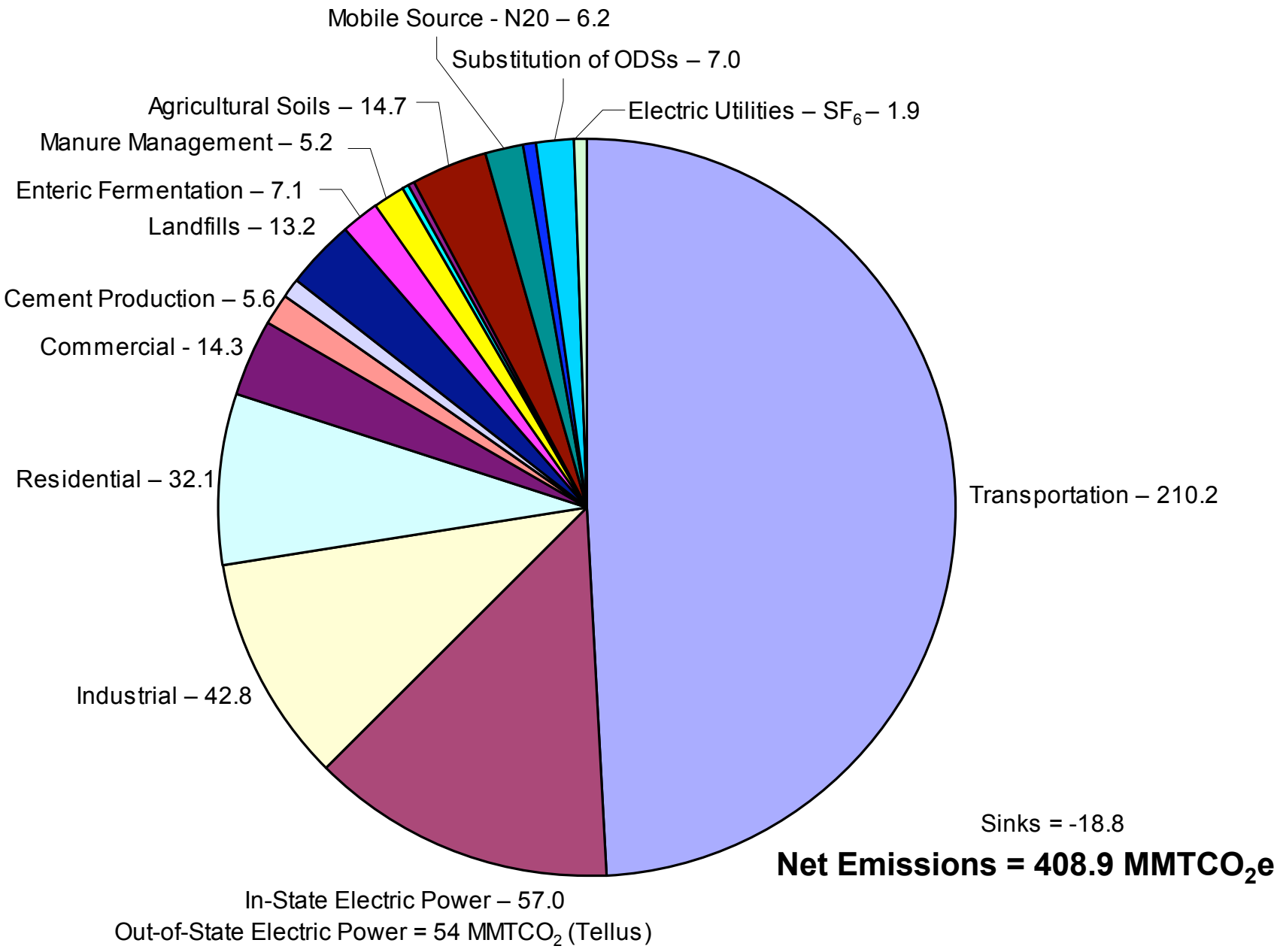
CA GHG Inventory – 1999 (Gross Emissions = 427.7 $MMTCO_2e$)

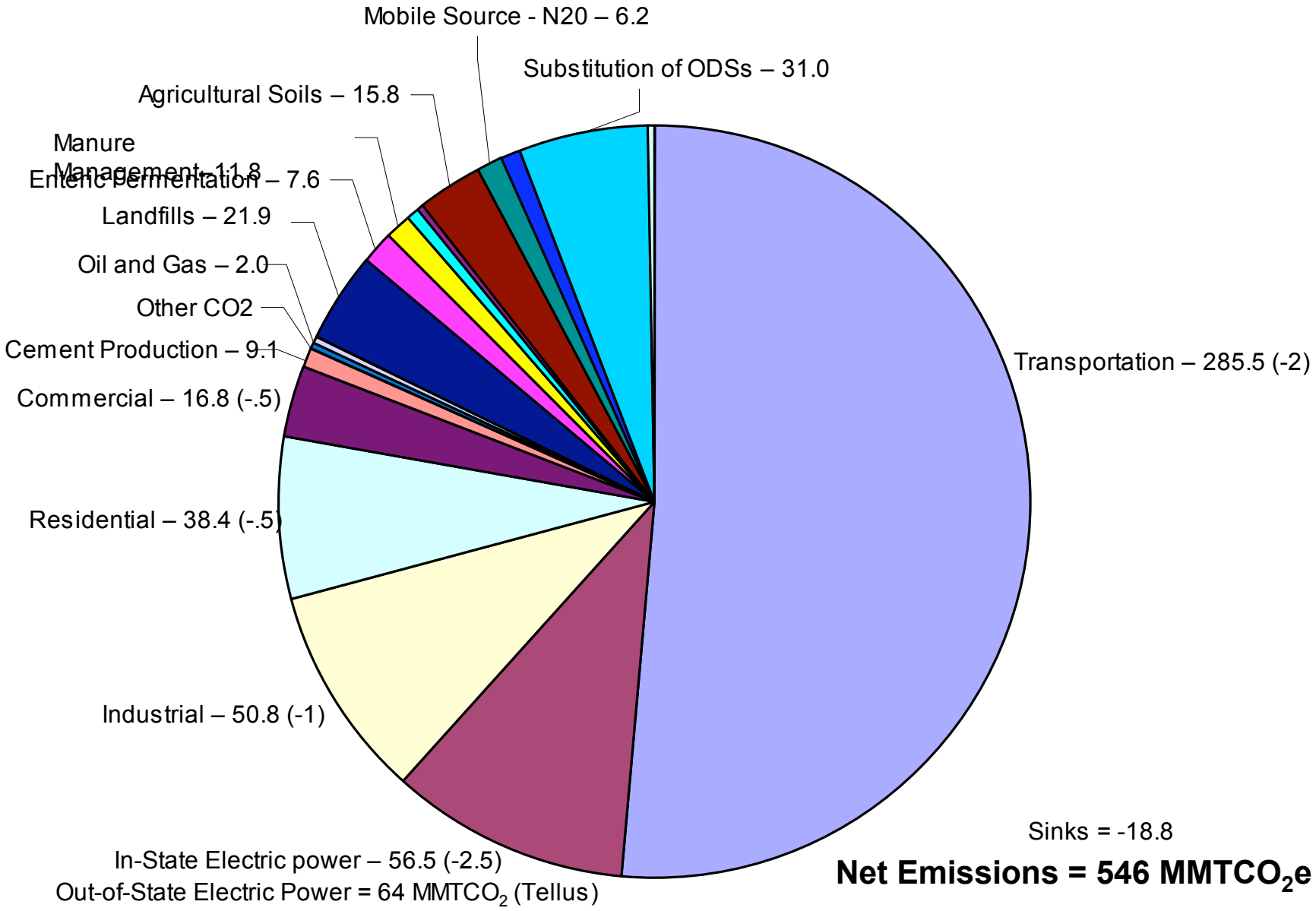


Sinks = -18.8

Net Emissions = 408.9 $MMTCO_2e$

Est. CA GHG Projections – 2020 (Gross Emissions = 564 $MMTCO_2e$)

Assumes 6.5 MMTCEs reduced from recent policies (shown in parentheses).



Note: In-state and out-of-state power emissions may be larger than shown due to demand changes.

Emissions Reductions Needed to Meet Example Statewide Goals

1990 emissions (CEC) = 399.5 $MMTCO_2e$
1999 emissions (CEC) = 408.9 $MMTCO_2e$
Estimated 2010 emissions (Tellus/CCAP) = 484
Estimated 2020 emissions (Tellus/CCAP) = 540.8

Emissions reductions needed to meet 1990 levels
In 2010 = 84.5
In 2020 = 141.3

Emissions reductions needed to meet 1999 levels
In 2010 = 75.1
In 2020 = 131.9

Note: Values include marine bunker fuels, exclude international aviation (data not available) and out-of-state power. Values are net of sinks.

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Potential GHG Reduction Opportunities

- Transportation sector
  - » Represents approximately 50% of GHG emissions
  - » Challenging to find cost-effective control options – will look at feebates, alternative fueled vehicles in niche fleets, options for reducing vehicle miles traveled (e.g., smart growth), biofuels, and incentives and fees
- Power Sector
  - » In-state power generation largely composed of natural gas and renewable energy
  - » Potential to control emissions from out-of-state power sources serving in-state power demand
- Industry Sector
  - » Untapped potential reduction options in the cement and petroleum refining sectors – e.g., can reduce up to 2 $MMTCO_2$ per year in the cement sector for less than $20/tonne
  - » Methane reduction potential by installing manure digesters with electricity generators at large dairy farms conservatively estimated at 0.8 $MMTCO_2e$ per year, at a net cost savings if net metering is available

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Overview of Analysis

- CCAP is analyzing CO_2 and methane reduction options in the power, industry, agriculture/forestry and transportation sectors
- Others are looking comprehensively at the high-GWP gases
- Results will be presented to the California Climate Change Advisory Committee as they become available

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The Process

For each sector, CCAP and other analysts will look at:

- Measures for reducing GHG emissions
- Costs and emissions reductions from those measures
  - » cost-effectiveness ($/ton CO_2 reduced)
  - » reduction potential (total tons CO_2 reduced)
- Policies for encouraging/requiring technical solutions (where applicable)
- Implementation issues

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Desired Outcome

Sector-specific analyses will be used to:

- Identify promising emission reduction approaches in each sector
- Consider the levels of effort required from the different sectors to meet various statewide goals

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